Abstract

The invention relates to a device for the photorealistic representation of dynamic, complex, three-dimensional scenes by means of ray-tracing. Said device comprises at least one programmable ray-tracing processor in which are implemented:

- special traversing instructions and/or
- vector arithmetic instructions and/or
- instructions for establishing ray-tracing acceleration structures and/or
- at least one decision unit (mailbox), which prevents objects or triangles that have already been intersected by a ray cast during ray tracing from being intersected again by the ray.

The inventive device is organized such as to allow a plurality of threads to be processed in parallel and to allow a plurality of threads to be automatically processed synchronously, the device being provided with an n-level cache hierarchy and/or virtual memory management and/or a direct link to the main memory.

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